

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1-10. (Canceled)

11. (Currently Amended) A treatment element delivery device, comprising:
an outer shaft comprising a tapered distal end, ~~[[and]]~~ a proximal end, ~~[[ends]]~~
and a lumen therebetween;

an inner shaft slidably disposed within and concentric with the outer shaft,
comprising a proximal end and a tapered distal end configured to engage the outer shaft
distal end, wherein the outer shaft distal end is positioned distal to the inner shaft distal
end, and the outer shaft is slidable relative to the inner shaft between a first position in
which the distal end of the inner shaft is positioned within the lumen of the outer shaft
and spaced from the distal end of the outer shaft and a second position in which the distal
end of the inner shaft matingly engages the distal end of the outer shaft;

a rigid inner member having distal and proximal ends and an interior portion
disposed inside the inner shaft and defining a lumen within the inner shaft, the proximal
end of the rigid inner member being coupled to the proximal end of the inner shaft, the
rigid inner member further comprising an exterior portion protruding beyond the distal
end of the inner shaft;

a stepped exterior tube comprising a wide diameter end and a sheath, the wide
diameter end being rigidly coupled to the distal end of the outer shaft and fully enclosing
the exterior portion of the rigid inner member in the second position; and

a catheter coupled to and extending distally from the rigid inner member distal
end,

the distal end of the catheter comprising a mounting region for a treatment
element, said treatment element mounting region being covered by the distal end of the
sheath in the first position, and the treatment element mounting region being uncovered
by the distal end of the sheath in the second position.

12. (Original) The apparatus of claim 11, further comprising gripping portions disposed on the inner shaft and outer shaft.

13. (Original) The apparatus of claim 11, the sheath further comprising distal and proximal ends, and being directly movable by movement of the outer shaft from the first position to the second position.

14. (Previously Presented) The apparatus of claim 13, in which the catheter includes a distal end disposed adjacent the distal end of the sheath.

15. (Original) The apparatus of claim 14, wherein the distal end of the catheter is covered by the distal end of the sheath in the first position, and the distal end of the catheter is uncovered by the distal end of the sheath in the second position.

16. (Original) The apparatus of claim 15, further comprising a stent disposed on the distal end of the catheter.

17. (Original) The apparatus of claim 16, wherein the stent is deployed when the distal end of the sheath uncovers the distal end of the catheter by movement of the outer shaft from the first position to the second position.

18. (Original) The apparatus of claim 11, further comprising a valve to flush air from the sheath.

19. (Currently Amended) A treatment element delivery device, comprising:
an outer shaft comprising distal and proximal ends and a lumen therebetween,
wherein the distal end includes a tapered inner surface;

an inner shaft slidably disposed within and concentric with outer shaft,
comprising a proximal end and a distal end having a tapered outer surface configured to matingly engage the tapered inner surface of the outer shaft distal end, wherein the outer

shaft distal end is positioned distal to the inner shaft distal end, and the outer shaft is slidable relative to the inner shaft between a first position in which the distal end of the inner shaft is positioned within the lumen of the outer shaft and spaced from the distal end of the outer shaft and a second position in which the tapered outer surface of the distal end of the inner shaft matingly engages the tapered inner surface of the distal end of the outer shaft;

a rigid inner member having distal and proximal ends and an interior portion disposed inside the inner shaft and defining a lumen within the inner shaft, the proximal end of the rigid inner member being coupled to the proximal end of the inner shaft, the rigid inner member further comprising an exterior portion protruding beyond the distal end of the inner shaft;

a stepped exterior tube, comprising a wide diameter end and a sheath, the wide diameter end being rigidly coupled to the distal end of the outer shaft and fully enclosing the exterior portion of the rigid inner member in the second position;

the sheath having distal and proximal ends, and being directly movable by movement of the outer shaft from the first position to the second position;

a catheter, comprising a distal end and a proximal end, the proximal end of the catheter being coupled to and extending distally from the rigid inner member, the distal end of the catheter being disposed adjacent the distal end of the sheath, the distal end of the catheter being covered by the distal end of the sheath in the first position, and the distal end of the catheter being uncovered by the distal end of the sheath in the second position; and

a stent disposed on the distal end of the catheter, wherein the stent is deployed when the distal end of the sheath uncovers the distal end of the catheter by movement of the outer shaft from the first position to the second position.

20. (Currently Amended) A method of deploying a treatment element, comprising:

providing an outer shaft comprising distal and proximal ends and a lumen therebetween;

providing an inner shaft comprising distal and proximal ends, slidably disposed

within and concentric with the outer shaft, comprising a proximal end and a distal end configured to engage the outer shaft distal end, wherein the outer shaft distal end is positioned distal to the inner shaft distal end;

providing a rigid inner member comprising distal and proximal ends, the rigid inner member further comprising an interior portion disposed inside the inner shaft and defining a lumen within the inner shaft, the proximal end of the rigid inner member being ~~coupled~~ directly mounted to the proximal end of the inner shaft, the rigid inner member further comprising an exterior portion protruding beyond the distal end of the inner shaft;

providing a catheter comprising a proximal end and a distal end, the proximal end of the catheter being rigidly coupled to and extending distally from the rigid inner member and the distal end comprising a treatment element mounting region;

providing a stepped exterior tube comprising a wide diameter end and a sheath, the wide diameter end being rigidly coupled to the distal end of the outer shaft and fully enclosing the exterior portion of the rigid inner member in the second position, the sheath comprising a proximal end and a distal end, the proximal end being fixedly connected to the distal end of the outer shaft, the distal end being disposed proximate the distal end of the catheter; and

uncovering the treatment element mounting region at the distal end of the catheter from the distal end of the sheath by moving the outer shaft from a first position in which the inner shaft is positioned within the lumen of the outer shaft and the proximal end of the outer shaft is spaced from the proximal end of the inner shaft to a second position in which the proximal end of the outer shaft engages the proximal end of the inner shaft.